

## CLAIMS

1. A clonal lentogenic oncolytic strain of Newcastle Disease Virus (NDV) comprising the DNA nucleotide sequence of SEQ ID NO: 1 encoding for the fusion (F) gene and at least part of the hemagglutinin-neuraminidase (HN) gene.
- 5 2. A pharmaceutical composition for the treatment of cancer comprising as an active ingredient a lentogenic oncolytic strain of NDV.
3. The pharmaceutical composition of claim 2 further comprising a suitable carrier.
4. The composition according to claim 2 wherein the lentogenic strain of NDV is the HUI.
- 10 5. The composition according to claim 4 comprising  $10^6-10^{12}$  EID<sub>50</sub> per unit dose.
6. The composition according to claim 2 further comprising at least one isolated viral glycoprotein having oncolytic activity.
7. The composition according to claim 6 wherein the at least one viral glycoprotein is from NDV.
- 15 8. The composition according to claim 7 wherein the at least one viral glycoprotein is the F glycoprotein of NDV.
9. The composition according to claim 7 wherein the at least one viral glycoprotein is the HN glycoprotein of NDV.
10. The composition according to claims 7 further comprising the F glycoprotein and HN glycoprotein of NDV.
- 20 11. The composition according to claims 7 wherein the viral glycoprotein is from a velogenic strain of NDV.
12. The composition according to claims 7 wherein the viral glycoprotein is from a mesogenic strain of NDV.
- 25 13. The composition according to claims 7 wherein the viral glycoprotein is from a lentogenic strain of NDV.
14. The composition according to claim 13 wherein the lentogenic strain of NDV is the HUI strain.

15. A composition for the treatment of cancer comprising at least one isolated viral glycoprotein or a subunit or analog thereof having oncolytic activity and a suitable carrier.
- 5 16. The composition according to claim 15 wherein the at least one viral glycoprotein is from NDV.
17. The composition according to claim 16 wherein the at least one viral glycoprotein is the F glycoprotein of NDV.
18. The composition according to claim 16 wherein the at least one viral glycoprotein is the HN glycoprotein of NDV.
- 10 19. The composition according to claim 15 further comprising the F glycoprotein and HN glycoprotein of NDV.
20. The composition according to claim 16 wherein the viral glycoprotein is from a velogenic strain of NDV.
- 15 21. The composition according to claim 16 wherein the viral glycoprotein is from a mesogenic strain of NDV.
22. The composition according to claim 16 wherein the viral glycoprotein is from a lentogenic strain of NDV.
23. The composition according to claim 22 wherein the lentogenic strain of NDV is the HUI.
- 20 24. A method for treating cancer in a patient comprising administering to the patient a therapeutically effective amount of a pharmaceutical composition according to claim 2.
- 25 25. The method of claim 24 wherein the step of administering is selected from intravenous, oral, buccal, intranasal, inhalation, topical application to a mucosal membrane or injection, including intradermal, intrathecal, intracisternal, and intralesional injection.
26. The method according to claim 24 wherein the step of administering comprises locally administering the composition to a tumor or in its vicinity.

27. The method according to claim 24 wherein the composition comprises a lentogenic oncolytic strain of NDV.

28. The method according to claim 27 wherein the lentogenic oncolytic strain of NDV is the HUI strain.

5 29. The method according to claim 28 wherein the step of administering comprises administering the HUI strain of NDV in a range of 20 EID<sub>50</sub>/cell to 2000 EID<sub>50</sub>/cell.

10 31. A method for treating cancer in a patient which comprises administering to a patient in need of such treatment at least one isolated polynucleotide encoding at least one viral polypeptide, or an analog or subunit thereof having oncolytic activity.

32. The method of claim 31, wherein the at least one isolated polynucleotide encodes the F glycoprotein of Newcastle Disease Virus.

15 33. The method of claim 31, wherein the at least one isolated polynucleotide encodes the HN glycoprotein of Newcastle Disease Virus.

20 34. The method of claim 31, wherein a combination of polypeptides is administered to the patient, wherein the combination includes an isolated polynucleotide encoding the F glycoprotein of Newcastle Disease Virus and an isolated polynucleotide encoding the HN glycoprotein of Newcastle Disease Virus.

35. The method of claim 31, which comprises administering to the patient at least one vector that comprises the at least one isolated polynucleotide encoding at least one viral polypeptide, or an analog or subunit thereof having oncolytic activity.

25 36. The method of claim 35, wherein the vector is a viral vector.

37. A method of making a cancer treatment composition which comprises incorporating in the composition an isolated viral glycoprotein or a subunit or analog thereof having oncolytic activity or of an isolated polynucleotide encoding the same.